REMARKS

Claims 1-21 remain pending in the present application, of which claims 1, 5-7, 10, 15 and 16 have been amended. New claims 22-23 have been added. Claims 3, 4 and 8 have been cancelled without prejudice or disclaimer of the subject matter therein. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1-9 have been rejected under 35 U.S.C § 112, first paragraph, as failing to provide an adequate written description. The specification has been objected to under 35 U.S.C § 112, first paragraph, as failing to provide an adequate written description.

The Office Action states that the meaning and significance of the "servo-tomo function" are not defined. Applicant respectfully maintains that the servo-tomo function is defined, as previously indicated and as shown on page 2, lines 12-20, and on page 6, lines 22-27 of the subject application. However, to address the Examiner's concerns, claim 1 has been amended to remove reference to "servo-tomo function". Therefore, Applicant respectfully requests that the rejection of claims 1-9 and the objection to the specification be withdrawn.

Claims 1-5, 8 and 9 have been rejected under 35 U.S.C. § 103 as being unpatentable over Khutoryansky et al. (USP 5,734,694). Claims 6, 7, and 10-21 have been rejected under 35 U.S.C. § 103 as being unpatentable over Khutoryansky et al. (USP 5,734,694) in view of Sata (USP 5,412,702). Applicant respectfully traverses the outstanding rejections for reasons set forth hereafter.

Khutoryansky neither teaches nor suggests acquiring first and second x-ray images by moving the detector in different directions. Claim 1 concerns a method for acquiring digital x-ray images including acquiring a first x-ray image by moving a detector in a first direction over a first detector scan range and moving an x-ray tube in a second direction over a first tube scan range, wherein the first and second directions are different. The detector and x-ray tube are then moved to preparation positions based upon scan ranges for the next slice. A second x-ray image is then acquired by moving the detector in the second direction over a second detector scan range and moving the x-ray tube in the first direction over a second tube scan range. In contrast,

Khutoryansky states "After each tomographic exposure, the system returns to the CENTER position." (Col. 8, lines 10-11) Therefore, the system of Khutoryansky does not teach or suggest moving the system to the preparation positions based on the next image or slice.

With respect to claims 6, 7 and 10-21, neither Khutoryansky nor Sata teach or suggest acquiring a series of images with a digital x-ray detector and displaying each of the images in the series as each image is acquired. Claim 10 concerns a method for displaying digital x-ray images in a multi-image format including acquiring a series of images with a digital x-ray detector and displaying images simultaneously as each image in the series of images is acquired.

Sata suggest acquiring image data with only one scan. Sata states "It should be understood that according to the present invention, the patient 20 is helically scanned only one time by the X-ray scanner 2 of the first X-ray CT imaging system 100 so as to obtain both of scano data and CT image data." (Col. 5, lines 4-8, emphasis added) Therefore, as illustrated in FIG. 10 of Sata, the CT image 23, top-viewed scanogram 26, and side-viewed scanogram 27 are all images derived from the one x-ray scan rather than images acquired in a series.

Additionally, it is respectfully submitted that there is no motivation to combine Khutoryansky and Sata, as Khutoryansky is silent with respect to displaying any images. No image monitor is illustrated in any figure, nor is a digital x-ray detector utilized. Instead Khutoryansky uses a table bucky and wall bucky with film to acquire images. (Col. 1, lines 26-28 and Col. 3, lines 60-62) Therefore, as Khutoryansky does not teach or suggest acquiring images and displaying them singly, in a multi-image format, or in any fashion, any combination of Khutoryansky and Sata would not render obvious the claimed invention.

In view of the foregoing, it is respectfully submitted that the pending claims define allowable subject matter. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the telephone number listed below.

Please charge any additional fees or credit overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,
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APPENDIX

AMENDMENTS TO THE CLAIMS

1. (Amended) A method for acquiring digital x-ray images, said method comprising:

identifying scan parameters designating slices of interest from a patient anatomy;

calculating scan ranges for each of said slices, said scan ranges corresponding to distances traveled by each of a detector and x-ray tube while said x-ray tube exposes said detector to radiation;

acquiring a first x-ray image with a detector while moving said detector in a first direction over a first detector scan range and moving said x-ray tube in a second direction over a first tube scan range, said second direction differing from said first direction, said first x-ray image being acquired based on said scan parameters;

moving said detector and x-ray tube to preparation positions based upon said scan ranges for the next said slice; and

acquiring a second x-ray image with said detector while moving said detector in said second direction over a second detector scan range and moving said x-ray tube in said first direction over a second tube scan range, said second x-ray image being acquired based on said scan parameters.

[scanning the patient in a first direction utilizing a servo-tomo function based on said scan parameters to obtain a first x-ray image; and

scanning the patient in a second direction utilizing the servo-tomo function based on said scan parameters to obtain a second x-ray image.]

5. (Amended) The method of claim 1, further comprising calculating [detector and x-ray tube] travel distances and sweep velocities for each of said first and second detector and tube scan ranges based on said scan parameters.

6. (Amended) The method of claim 1, further comprising:

[after scanning in said first direction,] displaying said first x-ray image on a monitor before completing said step of acquiring said second x-ray image; and

after [said scanning in said second direction,] acquiring said second x-ray image, displaying [wherein] said first and second x-ray images simultaneously on the monitor [are co-displayed] in a multi-image format.

7. (Amended) The method of claim 1, further comprising:

saving said first x-ray [the] image in an image storage device; and

displaying said first x-ray [the] image on a monitor in a multi-image format display before completing said step of acquiring said second x-ray image.

10. (Twice Amended) A method for displaying digital x-ray images in a multi-image format, said method comprising:

identifying scan parameters designating multiple slices of interest from a patient anatomy;

acquiring a series of images with a digital x-ray detector, each image in said series of images corresponding to a slice of interest;

displaying images simultaneously as each image in [of] said series of images is acquired; and

after acquisition and simultaneous display of said each image in said series of images, halting said acquiring step until reinitiated by an operator.

15. (Amended) The method of claim 10, wherein the acquiring step further comprises:

scanning a patient in a first direction to acquire a first image; and

scanning said patient in a direction opposite to said first direction to acquire a second image, said second image being acquired subsequent to said first image.

16. (Amended) The method of claim 10, wherein the acquiring step further comprises calculating first and second preparation positions located on opposite ends of a scan range over which said series of images of the patient are acquired [carried out].